TITLE

TOILET SEAT ADJUSTMENT

BACKGROUND

Usually, in order to pick up a toilet seat, a person will stoop almost in half, hook a finger under a sometimes unfamiliar and suspicious seat, and slowly lift the seat. While in this bent position, the person may move forward, in an effort to place the seat into its resting position against the back toilet tank. Likewise, when a toilet seat goes down, it must be guided carefully the whole way, lest it bang down. Thus, a person's body slowly folds with the seat until the seat finally rests on the toilet rim.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagram illustrating adjustment of a toilet seat.

FIG. 2 is a perspective diagram of a device to adjust the position of a toilet seat.

FIGs. 3-5 are schematic views of a device to adjust the position of a toilet seat.

DETAILED DESCRIPTION

Disclosed herein is a device that allows people to adjust toilet seats between the up and down seat positions with minimal effort. The device enables a person to position the toilet seat with dignity, comfort and with a great sense of

cleanliness. Additionally, by eliminating or reducing bending and reaching, the device can assist those with limited range of movement and those who experience pain from such motions. Further, through its ease of use, the device can facilitate an end to conflicts over seat position.

FIG. 1 illustrates operation of the device after being attached to a toilet seat 102a. As shown, the device includes a handle 120 and an assembly that enables the handle 120 to pivot relative to the seat 102 (i.e., the angle formed by the handle 120 and the seat 102 varies). Manipulation of the handle (from 120a to 120b) repositions the seat from the down position 120a to the up position 102b. When the toilet seat is down 102a, the handle 120a extends upward to the hand for ready lifting. When the toilet seat is up 102b, the handle 120b extends out, almost parallel to the floor, in excellent position for easy gripping. The extent that the handle 120 extends from the seat 102 may be adjusted and permits tailoring of the device to a person's individual needs. The device permits the seat 102 to be guided up and down with a simple wrist motion while the person remains in an upright position.

As an example of device operation, to move the seat from the down 102a to up 102b position, a person can slightly lift a knob or other grip atop the handle 120a. This lifting causes the handle 120a to being pivoting relative to the seat 102. This initial momentum and change in the handle 120/seat 102 angle enables a minimal handle push of the handle to rest the seat 102 against the toilet tank.

To move the seat from the up 102b to down 102a position, a person can

gently tug the handle 120b grip. This causes the seat 102 to begin to fall. This fall, however, is moderated by operation of the handle. That is, the seat 102 can only fall at the rate permitted by a person's manipulation of the handle 120.

In both cases, a person can quickly and intuitively adjust the seat 102 with a minimum of effort. In practice, the reduction in the effort of moving the seat 102 and the elimination of the distastefulness of touching the seat 102 can result in greater vigilance in returning the seat 102 to an agreed upon position.

FIG. 2 depicts a perspective view of the device in greater detail. As shown, the device includes a connecting plate 110 or other connection mechanism (e.g., adhesives or a clip) to attach the device to a toilet set. The connecting plate 110 shown includes pre-drilled holes sized to permit screws to attach the plate 110 to the underside of a toilet seat 102.

Attached to the connecting plate 110 may be an extension 114 that leads away from the seat 102 and separates the handle 120 from the seat by a distance between one and twelve inches (e.g., between 7 and 8 inches). The extension 114 reduces a sense of claustrophobia, provides a seated user with a wide range of motion, and prevents the device from touching and annoying the user.

As shown, the extension 114 may be configured to dip down almost immediately after its connection with the connecting plate 110. The dip in this case is approximately 2 inches, but could vary. This dip can help prevent contact between the extension 114 and the thigh of the user on the seat. The extension 114 may angle back up again so that the distant portion of the device is

approximately at the same height or higher than connecting plate 110.

At the end of the extension 114 is an assembly 116 that permits the handle 120 to pivot relative to the seat 102. The assembly may use a variety of pivoting mechanisms (e.g., ball and socket joint). In the implementation shown, a round hole is bored into the assembly 116 and, potentially, the end of the extension 114. A rod 122 is inserted into the hole such that the rod 122 can freely rotate.

To restrict rotation of the rod 122, a groove 124 may be cut into the assembly 116. In some implementations, the handle will be inserted into the rod 122 in the space provided by the groove 124. In the implementation shown, a retaining pin 118 may be connected to the portion of the rod 122 located within the groove 124. The pin 118 has a length that exceeds the diameter of the rod 122 and is inserted through the center of the rod at an angle normal to the rod 122 surface. While the groove 124 walls do not directly restrict rotation of the rod 122, rotating the rod 122 far enough in either direction causes the pin 118 to be restrained from further rotation, by the groove 124 walls. The groove 124 illustrated permits approximately 80 degrees of rotation.

As shown, a handle rod 120 may be attached to rotating rod 122. The handle rod 120 illustrated is approximately 12 inches, but different lengths are possible. Where the handle rod 120 attaches to the rotating rod 122, a mechanism (e.g., a screw) permits adjustment of the handle rod 120 upward or downward, in relation to the end of the rod 122. This feature permits the user to tailor the height of the handle 120 for maximum convenience (e.g., a taller person

may prefer a longer distance between a knob at the end of the handle rod 120 and the rotating rod 122). At the end of the handle rod 120 is a knob or other grip which is easy to hold and manipulate with one's hand. For example, the grip may be constructed from a dowel to form a "T" at the top of the handle. For instance, a hole may be bored through the top of the handle rod 120 to hold the dowel while permitting free rotation of the dowel.

When the seat is down 102, the handle rod 120 may be rotated to the extent allowed by the groove 124, such that the handle rod 120 is standing up, yet leaning slightly back toward the toilet tank. Thus, the resting position for the handle rod 120 is almost vertical. The user picks up the seat 102 by grabbing the handle (e.g., by a handle 120 grip) lifting slightly with the arm, and then, with a wrist motion, using the handle rod 120 to push the seat 102 away as it rises. With the seat 102 in its lifted position, the handle rod 120 is at its resting point. The handle 120 extends toward the user at an approximately 30 degrees angle to the floor. The handle is approximately 19 inches higher than the toilet rim, and approximately 8 inches to the side. The seat can now easily be lowered.

FIGs. 3-5 provide different schematic views of the device. In particular, FIG. 3 depicts a view from above, and shows the installation of the device on the underside of a toilet seat 102. As shown, the connecting plate 110 is attached to the seat 102 at the approximate mid-point between the front and back of the seat 102, so that it extends approximately perpendicularly away from the toilet seat, at the seat's 102 side.

While described above with reference to a particular implementation, a

wide variety of other implementations may use techniques described above. For example, instead of being attached to a toilet seat, a seat 102 integrating the device may be produced. Additionally, a wide variety of other implementations may be used to enable the handle to pivot relative to the seat.

Other embodiments are within the scope of the following claims.

What is claimed is: